



Goddard Procedures and Guidelines

DIRECTIVE NO. GPG 1270.4
EFFECTIVE DATE: _____
EXPIRATION DATE: _____

APPROVED BY Signature: _____
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TITLE: Director

Responsible Office: 100/Office of the Director

Title: QUALITY SYSTEM

Preface

P1. PURPOSE

This procedure establishes the GSFC quality system for developing, documenting, and implementing the activities necessary to assure the delivery of quality products.

P2. APPLICABILITY

This procedure applies to all GSFC organizations involved with Center products covered by the GSFC Quality Management System.

P3. AUTHORITY

GPD 1270.3, GSFC Quality Management System (QMS)

P4. REFERENCES

- a. NPG 7100.5, Program and Project Logistics Policy
- b. NPG 7120.5, Program and Project Management Processes and Requirements
- c. GPG 1270.3, GSFC Quality Manual
- d. GPG 1310.1, Customer Agreements
- e. GPG 1410.1, Directives Management
- f. GPG 1440.7, Control of Quality Records
- g. GPG 1710.1, Corrective and Preventive Action
- h. GPG 3410.2, Employee Training and Qualification
- i. GPG 4520.2, Incoming Inspection and Test
- j. GPG 5340.2, Control of Nonconforming Product

- k. GPG 5340.3, Preparation and Handling of Alerts and Safe Alerts
- l. GPG 6400.1, Handling, Storage, Packaging, Marking, Preservation, and Transportation
- m. GPG 8072.1, Process Control
- n. GPG 8700.1, Design Planning and Interface Management
- o. GPG 8700.2, Design Development
- p. GPG 8700.3, Design Validation
- q. GPG 8700.4, Technical Review Program
- r. GPG 8730.1, Calibration and Metrology

P5. CANCELLATION

- a. GMI 2570.1, GSFC Frequency Management
- b. GMI 2330.1, Planning and Scheduling
- c. GMI 2410.1, Software Management, Engineering, and Assurance Requirements
- d. GMI 5330.7, Development and Implementation of Environmental Verification Requirements for Space Flight Hardware
- e. GMI 8010.2, Classification of GSFC Orbital Flight Projects and Determination of Commensurate Performance Assurance Requirements

Procedure

1. DEFINITIONS

- a. Project – A project is a set of management, administrative, and technical activities leading to the delivery of a Center product in response to a Customer Agreement (see GPG 1310.1) and in accordance with Agency and GSFC requirements (see NPG 7100.5 and NPG 7120.5).
- b. Product Manager – The Product Manager is the person designated as having management responsibility for a Project. A Product Manager may be assigned to any directorate and have a title such as project manager, lead designer, principle investigator, RTOP manager, or cognizant engineer.
- c. Product Team – The Product Team consists of personnel assigned to assist in the development of a product the Performing Directorate and other supporting organizations. These activities may include ones such as planning, purchasing, financial analysis, technical management, configuration management, and scheduling.

d. Performing Directorate – The Performing Directorate has responsibility for managing the project in accordance with the requirements of the Customer Agreement (see GPG 1310.1).

2. IMPLEMENTATION

2.1 Quality System Documentation

The Quality System documentation structure is defined in the GSFC Quality Manual, GPG 1270.3. The quality System documentation includes the Center-level policies, procedures, and guidelines, directorate and lower-level procedures, and work instructions, that are necessary to ensure the proper implementation of Customer Agreements. All Quality System documentation shall be developed and controlled in accordance with GPG 1410.1 and GPG 1270.3.

External documents (documents not developed or controlled by the GSFC) shall be included in the Quality System documentation only to the extent that they are specifically referenced by Customer Agreements or other Quality System documents.

2.2 Quality Planning

2.2.1 The Performing Directorate shall assign a Product Manager for a Center product to be developed and delivered in accordance with a Customer Agreement (see GPG 1310.1). The Performing Directorate shall document the management review schedule for project formulation, approval, and implementation (see NPG 7120.5).

2.2.2 The Product Manager shall prepare and document plans that address project requirements that are derived from the Customer Agreement and from Center or Directorate requirements related to budget, schedule, risk management, acquisition, commercialization, and performance objectives (see NPG 7120.5A). The Product Manager shall establish a project development team as necessary to ensure that plans are appropriate for cost, schedule, and technical requirements. Supporting organizations shall provide qualified personnel for the project development team as requested by the Product Manager.

2.2.3 The requirement for a Product Manager to have specific types of plans and contents shall be tailored to meet Center, directorate, and Customer requirements for each project. The following list of plans and their functions are examples of those that may be required:

- a. Project Plan -- defines requirements for staffing and financial resources and establishes management control, including configuration management (see NPG 7120.5A).
- b. Project Systems Plan -- provides the systems analysis and lifecycle costing for concepts and options (see NPG 7100.5).
- c. Project Technology Requirements Plan -- examines concepts and assesses technology requirements. This will include identification of special controls, processes, equipment, fixtures, skills, inspection and test procedures, design producibility, measurement requirements, verification requirements, acceptance criteria, and logistics (see GPG's 8700.1, 8700.2, 8700.3, 8072.1, 8730.1, 4520.2, 5330.1, 6400.1, and 3410.2). Where the established GSFC Quality Management System (QMS) documents do not sufficiently address the implementation of project-unique, customer-derived quality requirements, the Product Manager shall develop these requirements within the project. To determine the need for and to develop project procedures, the following will be considered and addressed, as applicable:

1. The preparation of quality plans;
2. The identification and acquisition of any special or certified processes (see GPG 8072.1), equipment (including inspection and test equipment), fixtures, resources, and skills that may be needed to satisfy Customer Agreements;
3. Ensuring the compatibility of the design, the production process, installation, servicing, inspection and test procedures, and the applicable documentation;
4. The updating, as necessary, of quality control, inspection, and testing techniques, including the development of new instrumentation;
5. The identification of any measurement requirement involving capability that exceeds the known state of the art, in sufficient time for the needed capability to be developed;
6. The identification of suitable verification at appropriate stages in the realization of the product;
7. The clarification of standards of acceptability for all features and requirements, including those which contain a subjective element;
8. The identification and preparation of quality records.

d. Project Technology and Commercialization Plan -- develops technology options, including those for partnering and commercialization (see NPG 7120.5A).

e. Project Operations and Business Opportunities Plan -- identifies operational and business opportunities, including partnering for communications, tracking and data processing elements of the Project (see NPG 7120.5A).

f. Assessment of Infrastructure and Upgrade and Development Plan -- seeks to minimize life cycle costs (see NPG 7120.5A and NPG 7100.5).

g. Knowledge Capture Process Plan -- collects and evaluates process performance and identifies lessons learned (see GPG's 8700.4, 5340.2, 5340.3, 1710.1 and 1440.7).

2.3 Upon completion of the plans and in accordance with the Center and Performing Directorate's management review schedule requirements, the Product Manager shall submit the plans for management review and approval. With approval from management, the Product Manager shall implement the plans.

3. RECORDS

Management Review Schedule